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## TUG 2010 conference report

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The TUG 2010 annual conference was held Monday June 28 to Wednesday June 30 in San Francisco.<sup>1</sup> This annual conference celebrated the thirty-second anniversary of T<sub>E</sub>X. The conference venue was the Sir Francis Drake hotel,<sup>2</sup> a few steps from San Francisco’s famous Union Square and with the Powell Street cable car available at the front door of the hotel.

### Attendance and the opening reception

With Don Knuth and others of the Stanford group that helped Knuth develop T<sub>E</sub>X participating in the conference, attendance was high compared with other annual conferences in recent years. The conference’s location in San Francisco likely also contributed to attendance; many conference participants brought along family members and many came before the conference or stayed beyond the conference to sightsee in the San Francisco area and other parts of northern California.

More than half of the attendees of the conference were present at the Sunday 5–7 pm reception, renewing friendships, meeting new members of the T<sub>E</sub>X community, comparing trips into San Francisco, and so forth. TUG president Karl Berry, executive director Robin Laakso, and Robin’s daughter Sophia handled the registration table, handing out name tags and conference materials.

### Three-day program

As they have at previous TUG annual conferences, Sue DeMeritt and Cheryl Ponchin led a one-day introductory/intermediate L<sup>A</sup>T<sub>E</sub>X workshop. This year the workshop was held in parallel with the first day of the regular conference program. From the reports I overheard, the workshop was well received.

The main conference program was chock-a-block with interesting presentations.<sup>3</sup> Once again Kaveh Bazargan of River Valley Technologies recorded all of the presentations, and the full set of videos will be posted on the River Valley TV website.<sup>4</sup>

Since all of the presentations will be on the River Valley with many being printed in this issue of *TUGboat*, I will not describe any of the individual presentations (while I had some favorites among the

presentations that I would love to describe, other people undoubtedly had other favorites). Instead, I will try to describe the breadth of the presentations (Table 1). In some ways it seemed to me that there was a broader range of presentations this year compared with some others. The table shows my assessment of the areas covered by each presentation. There was a good bit of history, in keeping with the thirty-second anniversary theme of the conference. There was, to me, a surprising amount of philosophy. There were presentations by old timers and by young T<sub>E</sub>X developers and everyone in between. There were useful updates on widely used systems. Most interesting to me, beyond the impressive and useful characteristics of many of the systems and tools described, was the large numbers of instances where T<sub>E</sub>X was used in combination with other systems and tools. From the work described in the conference presentations, T<sub>E</sub>X certainly looks like it will be a viable and highly useful system for a lot of people for a long time.

The three days of the conference were divided into a morning session and afternoon session with a short mid-session break. Karl Berry coordinated the chairing of the morning and afternoon sessions with Michael Doob, Jim Hefferon, Klaus Höppner, Will Robertson, and me each taking care of all or part of a session. The TUG annual meeting was officially held at the end of the second day’s sessions.

A group photo was taken after lunch of the third day, by Alan Wetmore and Uwe Ziegenhagen. Jennifer Claudio and Alan also took photographs throughout the conference. The group photo and others are included in this issue.

Throughout the conference various small meetings took place, such as a MacT<sub>E</sub>X meeting and more or less one-on-one meetings regarding collaboration on various projects. One of the benefits of attending T<sub>E</sub>X conferences is the opportunity to do bits of T<sub>E</sub>X or other business in person.

### Stanford T<sub>E</sub>X developers panel and Knuth presentation

The second afternoon session of Wednesday was a unique event — a panel consisting of Don Knuth and nine of the Stanford students who helped create T<sub>E</sub>X as we know it today. The panelists, aside from Don (who needs no introduction to TUG members), were (in alphabetic order and mentioning only one or two of their contributions):

- David Fuchs was called “my right hand man for T<sub>E</sub>X82” by Don Knuth. David also did the initial development of the DVI format.
- John Hobby developed METAFONT’s polygonal pens and other aspects of METAFONT as part

<sup>1</sup> <http://tug.org/tug2010/>

<sup>2</sup> The hotel staff were very attentive to the needs of the conference, and provided excellent food service for breaks and lunch.

<sup>3</sup> <http://tug.org/tug2010/program.html>

<sup>4</sup> <http://river-valley.tv/conferences/tug-2010>

Table 1: Breadth of presentations

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
<b>First morning</b>														
Ross Moore: $\TeX$ +MathML for Tagged PDF					E									N
Will Robertson: Unicode mathematics in $\LaTeX$													M	N
Boris Veytsman: Are virtual fonts obsolete?										J			M	
Steve Grathwohl, David Ruddy: Math on the Web: Implementing MathJax in Project Euclid											K			N
Johannes Kúster: Math never seen												L	M	
<b>First afternoon</b>														
Alan Hoenig: $\TeX$ helps you learn Chinese character meanings		B							I					
Bill Cheswick: Ebooks: New challenges for beautiful typesetting									I					N
Hans Hagen: Just in Time: Things we can only do with Lua $\TeX$							G	H		J			M	
Hans Hagen: Building paragraphs with the help of Lua							G	H						
Idris Hamid: Oriental $\TeX$ : Culturally authentic typesetting of the Qur'an								H	I				M	
<b>Second morning</b>														
Michael Doob: A web-based $\TeX$ previewer: Ecstasy and agony									I	J				N
Jonathan Kew: $\TeX$ works for newcomers — and what's new for old hands								H	I	J				
Kaveh Bazargan: Batch Commander: an interactive style writer for $\TeX$										J				
Boris Veytsman, Leyla Akhmadeeva: $\TeX$ in the GLAMP world: On-demand creation of documents online									I					
Pavneet Arora: Using $\LaTeX$ to generate dynamic mathematics worksheets									I			L		
Stephen Hicks: Improving margin paragraphs and float control						F				J				
<b>Second afternoon</b>														
Herbert Voss: From PostScript to PDF					E	F								N
Jim Hefferon: Characterizing CTAN packages								H		J				
Didier Verna: Classes, styles, conflicts: The biological realm of $\LaTeX$												L		
Walter Gander: Writing the first $\LaTeX$ book				D										
William Hammond: $\LaTeX$ profiles as objects in the “category” of markup languages												L		
Chris Rowley: A brief history of $\LaTeX$ with a prediction				D										
<b>Third morning</b>														
Uwe Ziegenhagen: Dynamic reporting with R/Sweave and $\LaTeX$			C						I	J	K			
John Bowman: Interactive $\TeX$ -aware 3D vector graphics			C					H		J				
Mathieu Bourgeois, Roger Villemaire: Introduction to drawing structured diagrams in SDDL			C											
Jean-luc Doumont: Quantum spaces: Designing pages on grids		B										L		
Robert Rundell: Using the Knuth-Plass algorithm to help control widow and orphan lines						F								
Bart Childs: Thirty years of literate programming and more?				D								L		
<b>Third afternoon</b>														
John Hobby: Is boxes.mp the right way to draw diagrams?				D		F								
Hans Hagen, Taco Hoekwater: How $\TeX$ and Meta finally got married		B								J				
Frank Mittelbach: Exhuming coffins from the last century		B								J				
Don Knuth & Stanford $\TeX$ Project members: panel				D								L		
Don Knuth: A Special Announcement!	A													

*Legend for columns A–N*

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|-----------------|---|--|
| A. Unclassified | F. Ideas for new typesetting algorithms   | K. Systems using $\TeX$                            |
| B. Book design  | G. Distributions and formats              | L. Philosophy                                      |
| C. Graphics     | H. Status report on big on-going projects | M. Fonts   |
| D. History      | I. Applications of $\TeX$                 | N. More output devices and file formats for $\TeX$ |
| E. PDF          | J. Tools and approaches to aid $\TeX$ use |  |

part of his PhD thesis research. Later John developed MetaPost.

- Frank Liang worked with Don Knuth on the hyphenation algorithm for T<sub>E</sub>X78, and Frank’s PhD thesis presented a better hyphenation algorithm which is used in the T<sub>E</sub>X we know today and in many other typesetting systems.
- Oren Patashnik developed BIBT<sub>E</sub>X and is co-author of the *Concrete Mathematics* book.
- Michael Plass was co-implementor (with Frank) of the original prototype for T<sub>E</sub>X. His PhD thesis presented methods for line breaking and pagination with floats, methods which of course are used in T<sub>E</sub>X.
- Tom Rokicki developed the original Pascal-to-C converter for the T<sub>E</sub>X system and developed dvips.
- Luis Trabb Pardo was called “my right hand man” for the development of T<sub>E</sub>X78 by Don Knuth. Luis was also involved in interfacing to the early laser printers.
- Howard Trickey did one of the first ports of T<sub>E</sub>X to Unix. He also wrote the first four BIBT<sub>E</sub>X styles and related utility software.
- Joe Weening was involved in various ways in the transition from T<sub>E</sub>X78 to T<sub>E</sub>X82, and maintained the well-known `labrea.stanford.edu` FTP site.

I moderated this session, in which audience members asked questions of all of the panelists, the panelists reacted to each other’s answers and suggested topics about which other panelists should comment, and so forth. The discussion, lasting for an hour and a half, was fascinating. The video of the panel discussion is available<sup>5</sup> as is a written transcript.

Following the panel discussion, Don Knuth took the floor and presented the “Special announcement” that was listed in the conference program and about which there had been speculation at the conference and on the World Wide Web in the days before the conference. Don’s presentation, entitled “An Earthshaking Announcement”, *must be seen* to be appreciated: view the video.<sup>6</sup>

## Banquet

The banquet was held at the restaurant Le Colonial about two-and-one-half blocks from the hotel, and the Vietnamese/French food was excellent.

As in previous years, Kaveh Bazargan MC’d the presentations after dinner and dessert.

First Kaveh introduced Karl Berry who presented a commemorative book created especially for this thirty-second anniversary of T<sub>E</sub>X to Don Knuth and the other nine Stanford developers of T<sub>E</sub>X. Karl’s and my hack in creating this commemorative book was to mimic the design of *The T<sub>E</sub>Xbook*, including a cover illustration by Duane Bibby and reprints of previous Bibby illustrations throughout the book. The text of the book included a foreword by Barbara Beeton, introductions to Knuth and the other Stanford people and reprints of papers from *TUGboat* by Knuth and the others. Titled *T<sub>E</sub>X’s 25<sup>th</sup> Anniversary: A Commemorative Collection*, the book is for sale (with a discount for members) from the TUG store,<sup>7</sup> and is available online to members.<sup>8</sup> The original drawing for the book’s cover was given by random selection to one of the other Stanford developers, and went to Michael Plass.

Next, Kaveh managed the usual “soapbox” opportunity for anyone at the banquet to say something about T<sub>E</sub>X, the conference, . . . , with careful timing by Jennifer Claudio and the penalty of going over or under of having to buy Kaveh a drink. For this year, the required interval was 32 seconds minimum to 128 seconds maximum. Several people took an opportunity to speak, notably David Fuchs recalling a bit of history he had not had an opportunity to mention during the afternoon panel. TUG was just coming into existence as *The T<sub>E</sub>Xbook* was being finished. The book already included Appendix A (Answers to exercises), Appendix B (Basic control sequences), and so on through Appendix I (Index). David mentioned to Don that perhaps something about TUG should be included in the book. Don said that sounded good, but David would have to come up with a title beginning with ‘J’. David thought about it overnight and in the morning came back with the title for Appendix J: *Joining the T<sub>E</sub>X Community*.

Next, Hans Hagen presented an original Duane Bibby drawing to Don Knuth and John Hobby from the LuaT<sub>E</sub>X team — for Don’s and John’s contributions that underly LuaT<sub>E</sub>X with its embedded MetaPost. The LuaT<sub>E</sub>X team commissioned the drawing showing Don and John proofing a Punk Font<sup>9</sup> sheet just processed by a LuaT<sub>E</sub>X driven printing press with `mplib` inside.

Hans also presented Don with a gift from the ConT<sub>E</sub>Xt user community: a mockup of the SET® game (made by ConT<sub>E</sub>Xt development group member Mojca Miklavc) and packaged in a special box made by Willi Egger (the ConT<sub>E</sub>Xt group’s expert on

<sup>5</sup> <http://river-valley.tv/tug-2010-panel>

<sup>6</sup> <http://river-valley.tv/an-earthshaking-announcement>

<sup>7</sup> <http://tug.org/store>

<sup>8</sup> <https://www.tug.org/members>

<sup>9</sup> <http://tug.org/TUGboat/Articles/tb09-2/tb21knut.pdf>

bookbinding, printing, and packaging). The set uses the cow font<sup>10</sup> and uses the words “LUA”, “TEX”, and “MP” in several colors and variants.

As usual, T<sub>E</sub>X-related vendors provided books and other products to TUG which are raffled off to people at the banquet (all registered conference attendees’ names are in the bowl from which names are randomly drawn). This year a copy of each of Don’s books published by CSLI was raffled off, along with books donated by Green Lion Press, University Science Books, and Addison-Wesley. Two copies of Jean-luc Doumont’s beautiful book which he used to illustrate his conference presentation on “Quantum Spaces” were also in the raffle.

Karl then acknowledged my contributions to TUG, this conference, and the commemorative book, and he gave me a hardbound copy of Knuth’s book *Digital Typography* including a dust cover. Don’s publisher at Stanford Center for the Study of Language and Information (CSLI) had contributed this special edition to TUG, it being one of only five hardbound copies of *Digital Typography* in existence with dust covers. Karl then acknowledged the contributions of Kaja Christiansen, longtime TUG vice-president from Aarhus University which provides space, electricity, and Internet connectivity for the main TUG server, for which Kaja is co-system administrator. Karl gave the original of the conference poster by Duane Bibby to Kaja. Finally, Karl acknowledged the efforts over the years and especially for this conference of Robin Laakso, TUG’s executive director (observing Robin at the conference, there didn’t seem to be so much that was “executive” about her job—she was working at a pretty nitty-gritty, hands-on level).

We then heard a violin solo by Zhenya and Morten Høgholm’s young son, David.

Don Knuth ended the evening’s formal presentations by exhibiting copies of “*A keepsake in honor of T<sub>E</sub>X’s 32nd anniversary, 30 June 2010*”. The keepsake was a piece of embroidery of an image of the T<sub>E</sub>X lion sitting on a pedestal with the annotation, “This souvenir T<sub>E</sub>X lion was embroidered by a numerically

controlled sewing machine using the remarkably simple EULER-TRAIL algorithm at [www-cs-faculty.stanford.edu/~knuth/programs.html](http://www-cs-faculty.stanford.edu/~knuth/programs.html).” Don gave copies of the keepsake to the nine other early Stanford T<sub>E</sub>X people in attendance, and to Barbara Beeton, Karl Berry, Hans Hagen, Jonathan Kew, and Frank Mittelbach for their work in pushing T<sub>E</sub>X. Finally, Don gave to all of us attending the banquet a 2.25-inch square framed image of his newly announced logo.<sup>6</sup>



I see a certain pattern in the execution of various of the items mentioned above—the items Don presented, the items Hans presented, and the commemorative book. It seems the members of the T<sub>E</sub>X community don’t just use Don’s typesetting capability; he is also our model for detail and precision of execution of even one-off projects.

The evening finished informally, with goodbyes, promises to see you next time, agreements to follow-up by email, and so forth. We had all been brought together by T<sub>E</sub>X and now we were departing, but we would remain connected by T<sub>E</sub>X and our memories of having spent a couple of days with its creator. John Bowman summed it up this way:

A professor from Stanford nearly went through the roof  
On laying eyes on his very first galley proof

He said “What the heck,  
I’ll go invent T<sub>E</sub>X”

That man’s name, my dear friends, was Donald E. Knuth!

All in all, from where I was sitting, the conference was a smashing success.

◇ David Walden  
E. Sandwich, MA  
<http://www.walden-family.com>

<sup>10</sup> <http://tug.org/TUGboat/Articles/tb27-1/tb86hoekwater-cows.pdf>